

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A volume controller for controlling volume balance between a front speaker and a rear speaker located within a vehicle, comprising:

a fade volume computing unit for computing an amplifying factor k_1 of an input signal for providing an increased volume at the rear or front speaker by the volume at a prescribed position within the vehicle which is equal to a decreased volume at the front or rear speaker when an input signal is attenuated by an attenuating factor K_1 , so that when a balancing point is moved from the prescribed position, a total volume at the prescribed position ~~within the vehicle~~ is unchanged; and

a control unit for multiplying the signal supplied to the rear or front speaker by the amplifying factor k_1 when the input signal supplied to the front or rear speaker is attenuated by the attenuating factor K_1 and configured to deal with a next fade input with attenuations changed by the amplifying factor k_1 and the attenuating factor K_1 recorded and newly set upon completion of the fade volume computing,

wherein attenuations when acoustic waves from the front speaker and rear speaker are propagated to the prescribed position are previously recorded, and on the basis of the attenuations, the increased and decreased volumes at the front or rear speaker are computed.

2. (previously presented): A volume controller according to claim 1, wherein the prescribed position is located at a center of a front seat, at a center of a rear seat, or a center between the front seat and the rear seat.

3. (canceled).

4. (previously presented): A volume controller according to claim 1, wherein the attenuations are computed on the basis of an input indicative of a relationship between the prescribed position and positions where the front and rear speakers are located.

5. (previously presented): A volume controller according to claim 1, wherein the decreased volume at the front or rear speaker and the increased volume at the rear or front speaker are computed on an adjustment value in a level adjusting means to be connected to the front speaker and the rear speaker.

6-16. (canceled).

17. (new): A volume controller, comprising:
an input circuit that receives a user input and that generates an adjustment command based on the user inputs; and

a control circuit that, in response to the adjustment command, moves a balancing point of at least a first speaker and a second speaker relative to a predetermined position by adjusting a relative volume of at least the first speaker and the second speaker,

wherein sound from at least the first speaker and the second speaker has a total volume at the predetermined position, and

wherein the total volume at the predetermined position before the balancing point is moved is substantially the same as the total volume at the predetermined position after the balancing point is moved.

18. (new): The volume controller as claimed in claim 17, wherein the first speaker is a front speaker in a vehicle,

wherein the second speaker is a rear speaker in the vehicle, and

wherein the user input is a fade adjustment input.

19. (new): The volume controller as claimed in claim 17, wherein the control circuit adjusts the relative volume by increasing the volume of the first speaker and decreasing the volume of the second speaker.

20. (new): The volume controller as claimed in claim 18, wherein the control circuit adjusts the relative volume by increasing the volume of the first speaker and decreasing the volume of the second speaker.

21. (new): The volume controller as claimed in claim 17, wherein the control circuit adjusts the relative volume by decreasing the volume of the first speaker and increasing the volume of the second speaker.

22. (new): The volume controller as claimed in claim 17, wherein the control circuit adjusts the relative volume by decreasing the volume of the first speaker and increasing the volume of the second speaker.

23. (new): The volume controller as claimed in claim 18, wherein the control circuit adjusts the relative volume by decreasing the volume of the first speaker and increasing the volume of the second speaker.

24. (new): The volume controller as claimed in claim 18, wherein the control circuit adjusts the relative volume based on a relationship between the predetermined position and positions where at least the first speaker and the second speaker are located.

25. (new): The volume controller as claimed in claim 17, wherein the control circuit adjusts the relative volume by amplifying an input signal to one speaker of the first speaker and the second speaker based on an amplification factor and attenuating an input signal to another speaker of the first speaker and the second speaker based on an attenuation factor,

wherein amplifying the input signal to the one speaker increases the volume of the one speaker and attenuating the input signal to the other speaker increases the volume of the other speaker.

26. (new): A volume controller, comprising:
an input circuit that receives a user input and that generates an adjustment command based on the user inputs; and
a control circuit that, in response to the adjustment command, moves a balancing point of a plurality of speakers by adjusting a relative volume of the plurality of speakers,
wherein sound from plurality of speakers has a total volume at the predetermined position, and
wherein the total volume at the predetermined position remains unchanged when the balancing point moves.

27. (new): The volume controller according to claim 26, wherein the predetermined position is located at a center of a front seat of a vehicle, at a center of a rear seat of the vehicle, or a center between the front seat and the rear seat.

28. (new): The volume controller as claimed in claim 26, wherein the control circuit adjusts the relative volume based on a relationship between the predetermined position and positions where the plurality of speakers are located.

29. (new): The volume controller as claimed in claim 26, wherein the user input is a fade adjustment input.

30. (new): The volume controller as claimed in claim 26, wherein the plurality of speakers comprise:

a front set of speakers in a front portion of a vehicle; and

a rear set of speakers in a rear portion of the vehicle.

31. (new): The volume controller as claimed in claim 30, wherein, in response to the fade adjustment input, the control circuit moves the balancing point by adjusting a relative volume between the front set of speakers and the rear set of speakers.